

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                        |   |                               |
|------------------------|---|-------------------------------|
| Applicant:             | ) | For: "Chitinase Materials and |
|                        | ) | Methods"                      |
| Patrick Gray           | ) |                               |
|                        | ) | Group Art Unit: 1814          |
| Serial No.: 08/663,618 | ) |                               |
|                        | ) | Examiner: R. Prouty, Ph.D.    |
| Filed: June 14, 1996   | ) |                               |

**SECOND DECLARATION OF PATRICK W. GRAY UNDER 37 C.F.R. §1.131**

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

I, Patrick W. Gray, declare as follows that:

1. I am the sole inventor of the subject matter claimed in the above-identified patent application.

2. I make this declaration to establish that I invented the subject matter recited in the pending claims of this application in the United States at a date prior to November, 1995, which I am informed is the publication date of the article Boot *et al.*, *J. Biol. Chem.*, 270:26252-26256 (1995), which has been cited by the Examiner to support rejections of the claims under 35 U.S.C. §§102 and 103.

3. Exhibits 1 and 2 attached hereto are evidence that I invented subject matter of currently pending claims 1-18 (polynucleotides encoding human chitinase, vectors and host cells comprising such polynucleotides, and uses of such host cells) in the United States prior to November, 1995.

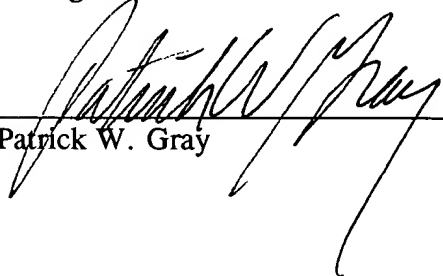
4. As described in Example 1 of the application, a plasmid designated MO-911 was isolated and identified as containing a portion of the coding region for a human chitinase

homolog. The documents attached hereto as Exhibit 1 demonstrate that, prior to the November, 1995 publication date of the Boot *et al.* article, the plasmid MO-911 had been isolated, partially sequenced, and characterized as a chitinase by comparison with other known sequences in nucleotide and peptide sequence databases. Exhibit 1 consists of true copies of the following documents (with dates covered), all of which are dated prior to November, 1995: (a) a laboratory notebook page recorded by Heather Pearson, a fellow employee at ICOS Corporation, Bothell, Washington, U.S.A., who performed laboratory work at my direction and under my supervision; (b) a readout of data from a DNA sequencing machine; and (c) an email reporting results of a computer search (using the BLAST Network Service of the National Center for Biotechnology Information) that compared the sequence from (b) with other known sequences in the Genbank databases. The top left portion of the notebook page shows the DNA sequencing request for a number of plasmids, including MO-911. The bottom portion of the notebook page lists the following information for each plasmid: (1) the plasmid name (*e.g.*, MO911), (2) the identification number for the sequence obtained (*e.g.*, mc17705), and (3) a description of the closest related sequence found during the BLAST search. The accompanying readout from the DNA sequencing machine shows the actual sequence data obtained for MO-911 (identified as "mc17705" and "MO911" at the top of the page). The accompanying email shows the BLAST search results for the MO-911 sequence (identified as sequence number "17705" in the subject field), which listed a number of chitinases and chitinase-like mammalian proteins.

5. As described in Example 1 of the application, subsequent to the sequencing and characterization of MO-911, a plasmid designated MO-218 was isolated and identified as containing a DNA insert encoding full length human chitinase. Examples 3 and 5 of the application show that the DNA encoded chitinase activity. The documents attached hereto as Exhibit 2 demonstrate that, prior to the November, 1995 publication date of the Boot *et al.* article, the plasmid MO-218 had been isolated, partially sequenced, and characterized as a chitinase by comparison with MO-911 and other sequences in nucleotide and peptide sequence databases. Exhibit 2 consists of true copies of the following documents (with dates covered),

all of which are dated prior to November, 1995: (a) a laboratory notebook page recorded by Aaron Smith, a fellow employee at ICOS Corporation, Bothell, Washington, U.S.A., who performed laboratory work at my direction and under my supervision [a facsimile copy of this notebook page was attached as Exhibit 1 to my previous Declaration Under 37 C.F.R. §1.131 executed December 8, 1997]; (b) a readout of data from a DNA sequencing machine; and (c) an email reporting results of a NCBI BLAST search that compared the sequence from (b) with other known sequences in the Genbank databases. The top right portion of the notebook page shows the DNA sequencing request for a number of plasmids, including MO-218. The bottom portion of the notebook page lists the following information for each plasmid: (1) the plasmid name (*e.g.*, MO218), (2) the identification number for the sequence obtained (*e.g.*, mc19215), and (3) a description of the closest related sequence found during the BLAST search. The accompanying readout from the DNA sequencing machine shows the actual sequence data obtained for MO-218 (identified as "mc19215" and "MO218" at the top of the page). The accompanying email shows the BLAST search results for the MO-218 sequence (identified as sequence number "19215" in the second subject field), which lists a number of chitinase-like proteins.

6. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

  
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Patrick W. Gray

  
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Date